Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Luda Voskov, Project Manager
Environmental Cleanup Section
Remediation Division

Date: DRAFT

From: Joseph T. Haney, Jr., M.S.
Toxicology Section
Chief Engineer's Office

Subject: Toxicology Section Review of the
Fish Ingestion Pathway Human Health Baseline Risk Assessment for the Intracoastal Waterway near the Gulfco Marine Maintenance Federal Superfund Site, Freeport, Texas.

The Toxicology Section (TS) reviewed the March 20, 2007 fish ingestion human health baseline risk assessment (HHBLRA-fish) for the Intracoastal Waterway near the Gulfco Marine Maintenance Federal Superfund Site. The HHBLRA-fish evaluates human health risks and hazards associated with potential exposure to site-related chemical contaminants through the ingestion of fish. TS reviewed the HHBLRA-fish to ensure compliance with the Texas Risk Reduction Program (TRRP; 30 TAC §350) rule and applicable TRRP guidance (i.e., TRRP-24). The HHBLRA-fish was prepared by Pastor, Behling, & Wheeler, LLC of Round Rock, Tx. Areas mentioned in the HHBLRA-fish for which TS does not have expertise were not reviewed (e.g., QA/QC data, site delineation/adequacy of sampling, sample compositing). The section headings below correspond to those contained in the HHBLRA-fish.

Table 1: Fish Tissue Data

The sample detection limits (SDLs) reported in this table for numerous analyses appear to be higher than the target Gulfco method detection limits (MDLs) provided by USEPA for several chemicals of potential concern (COPCs). This appears to be the case for the following COPCs: benzo(a)pyrene, benz-a-anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, hexachlorobenzene, and indeno(1,2,3-cd)pyrene. Additionally, for benzo(a)pyrene, dibenz(a,h)anthracene, and hexachlorobenzene, several reported SDLs are higher than applicable TCEQ (TRRP-24) fish tissue risk-based exposure limits (i.e., $RBELs_{Fish}$) and would likely be above Texas Department of State Health Services (DSHS) fish tissue health-based assessment comparison (HAC) values. For benz-a-anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene, several reported SDLs are higher than applicable TRRP $RBELs_{Fish}$ (but below DSHS HAC values). *If the TCEQ project manager determines that the samples with SDLs below or not significantly above target MDLs (average of ≈ 46% of the samples for the COPCs mentioned above) are adequately representative of fish tissue concentrations, then these sample results with adequate SDLs (and nature of the COPCs) suggest that these COPCs are likely not of concern based on fish ingestion.*

Exposure Quantification and Table 5: Risk Characterization for Fish Tissue Ingestion Pathway

The *Exposure Quantification* section refers to exposure parameters (e.g., fraction-ingested value of 0.325, fish ingestion rates, exposure durations) which differ from the recommendations provided in TRRP-24. When using the same exposure point concentration (EPC), these assumptions appear to reduce the reasonable maximum exposure (RME) calculated risk by approximately 4 times and the RME hazard by approximately 1.5 times (Table 5 referenced), relative to the risk/hazard calculated using exposure assumptions suggested in TRRP-24. *However, if the TCEQ project manager determines that the samples with adequate SDLs for benzo(b)fluoranthene (14 samples comprising ≈ 42% of the samples) are representative, TS agrees that the COPCs evaluated in the HHBLRA-fish (i.e., silver, DDE, and benzo(b)fluoranthene) are unlikely to represent unacceptable risk or hazard due to fish ingestion.*

Please call me at (512) 239-5691 if you have any questions regarding this evaluation.

cc: Toxicology Section (via e-mail), Board, Remediation File